

May 14, 1970

Mr. A. P. Cortizas  
Staff Engineering Scientist  
Command & Control  
Program Management Office, MS 11  
RCA Defense Electronic Products  
P. O. Box 588  
Burlington, Mass. 01801

Dear Mr. Cortizas:

The VHF-FM portion of T.M.C.'s product line currently consists of one unit, the SPT-3KVHF transmitter. Provided for the U. S. Air Force, this transmitter is designed to operate in CW, AM, FM, and TV modes at up to 2.5Kw sync power levels.

Since this equipment may exceed your requirements, I have reproduced our data sheets on technical specifications and features. This will provide you with adequate information until you think it necessary to investigate the equipment further.

We would be pleased to assist you in your planning effort. Should you need the services of T.M.C. personnel, please let me know.

Very truly yours,

Neil H. dePasquale  
Director of Marketing

NHdeP/rt

## DESCRIPTION

The TMC Model SPT-3KVHF transmitter provides CW, AM, FM and television transmission in the 30 megacycle to 350 megacycle range. Coverage is provided in two bands (30 to 150 MHz, and 150 to 350 MHz). In each band, two identical channels are provided so that a total of four simultaneous 2KW outputs are obtained, each with fully independent modulation capability.

The television modulator is designed to accept CCIR and FCC standard composite video signals for monochrome television transmission on any national or international TV allocation.

Important features of this transmitter complex are its ability to be switched rapidly between modes of operation and between frequencies. Either low band RF output can be placed on either low band antenna; and either high band RF output can be placed on either high band antenna. Test points, metering and status indicators are front panel mounted. In addition, a variable RF power control and a video demodulator chopper unit is included for monitoring video signals for test purposes. VSWR indicators are provided for each channel.

Remote control terminals for several important operating functions and indications, including "plate on-off" and "output power level" are furnished for interface with other control consoles.

### TECHNICAL CAPABILITIES

Frequency Range:	30 to 150 MHz (2 channels) and 150 MHz to 350MHz (2 channels).
Modes of Operation:	CW, AM, FM and TV.
Power Output:	a. 2 KW CW (A-1, F-3). b. 2.5KW sync peak (A-5) w/1.2KW AVG. c. 2KW AM average power with 100% modulation.
Output Impedance:	50 ohms unbalanced. Will match any antenna with a VSWR of 2:1 or less.
Frequency Stability:	Phase locked oscillator controlled, 5 parts in $10^6$ per day.
Frequency Control:	Continuous with digital readout on all four bays. Resolution equals 5 parts in $10^6$

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**Tuning System:** Continuous tuning with all power level, tuning and bandswitching controls available from the front panel.

**Noise Level:** Noise level is at least 45db down from full output on AM, with a 400 cycle modulating tone at 100% modulation.

**RF Bandwidth:** 1 MHz,  $\pm 1$ db, 2.5 MHz,  $\pm 2$  db, 4 MHz,  $\pm 3$  db, 6 MHz,  $\pm 12$  db, 7 MHz,  $\pm 24$  db (TV allocations only).

**Audio Response** 100 Hz to 5000 Hz  $\pm 3$  db in AM mode, 50 Hz to 10,000 Hz in FM mode ( $\pm 50$  KHz peak deviation) with pre-emphasis.

**Audio Input:** 0 dbm for 100% modulation.

**Audio Input Impedance:** 600 ohms  $\pm 10\%$  balanced.

**Video Input Level:** 1 volt peak to peak composite video at 75 ohms.

**Video Modulation Capability:** 12.5%  $\pm 2.5\%$  (Reference White).

**Video Sideband Suppression:** No sideband filters are supplied.

**Video Harmonic Suppression:** No harmonic filters are supplied.

**Heat Dissipation:** Approximately 38KW maximum with all bays operating at full power in the AM mode.

**Metering:** Front panel meters provide indications of the operation of all critical circuits in each bay including VSWR meters for each, and will also include PA plate volts and amps, IPA plate volts and amps, filament volts.

**Altitude:** 0 to 8000 feet.

**Safety Features:** Overload and bias protection with automatic alarm and indication and safety interlocks for protection at all high voltage points, in accordance with good engineering practice.

**Keying Information:** CW: 500 words per minute, by contact closure to ground.

**Installation Data:** Weight: approximately 5000 lbs.  
Size: 110" wide x 72" high x 40" deep.  
(Power supplies are mounted external to the transmitter)

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Cooling:

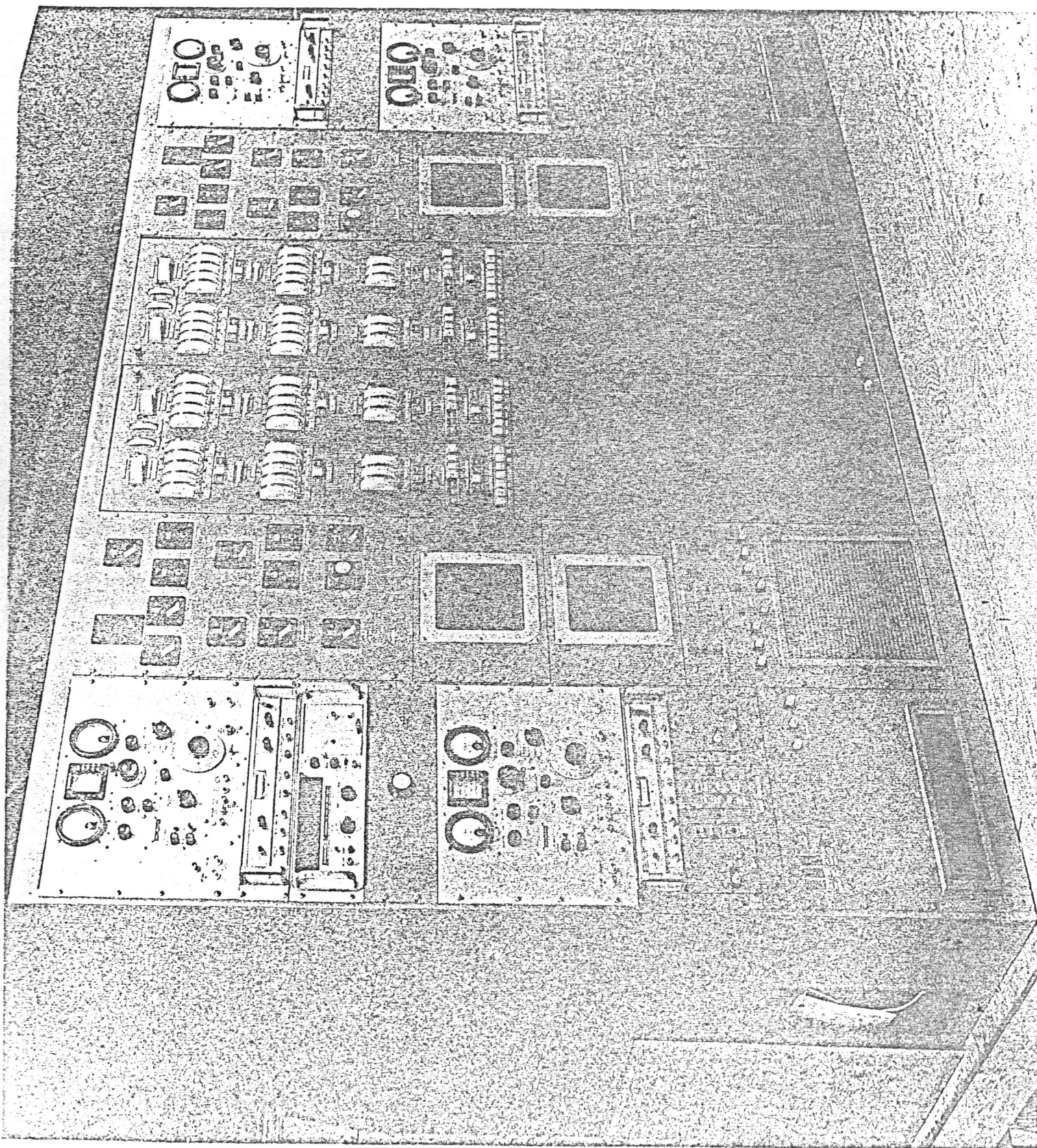
Forced air.

Primary Power:

208 volts, 60 Hz, 3 phase  $\pm 10\%$ , maximum 50 KW average demand with all bays operating at full power in AM mode. Transformers tapped + or -10% on primaries where required.

Special Features:

- a. Sample points for monitoring throughout in accordance with good engineering practice.
- b. Continuously variable, front panel and remotely controlled power level for each bay.





11 May 1970

Technical Material Corporation  
700 Fenimore Road  
Mamaroneck, New York 10543

Dear Sir:

We are interested in obtaining technical literature pertaining to your military avionic communications product line.

In addition, we are specifically interested in multichannel VHF-FM transmitters, receivers and transceivers.

These equipments should provide two-way radio communications in the 134-174 MHz frequency band at a nominal 10 - 25 watts r-f output. Tuning flexibility may be provided by means of frequency synthesizers and should be such that either single frequency transmit/receive or dual frequency transmit/receive (Telephone Company service compatible) capabilities can be provided.

Very truly yours,

A handwritten signature in cursive script, appearing to read 'A. P. Cortizas', written over a horizontal line.

A. P. Cortizas  
Staff Engineering Scientist  
Command & Control  
Program Management Office, MS 11

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